paid for. That enables them to plan for their overheads, it enables them to arrange their labour economically, and gives them a future on which to base calculations. Then extra jobs can easily be sandwiched in without heavy costs caused by slack periods, etc. Some work such as Seitz issued, going through slowly and issued in parts, is ideal, and by carefully planning such a scheme with a firm the cost per figure could, I am certain, be very substantially reduced with benefit to all. But the difficulty would be to get the degree of co-operation to ensure funds and then to allocate them. Several blocks made together are vastly cheaper than having them all made independently, and at the moment individuals ordering their own blocks cannot easily combine with others to obtain this advantage. A central ordering bureau could obtain this advantage.

I hope I may have done something to enlighten D. M. To answer fully I should have to quote technical explanations at length, touch on commercial costing problems, expound Trade Union restrictions, and find a way to weld into one the separate orderings of illustrations by all individuals and Societies! Nevertheless, I see no reason why this should not be done; it ought to be done, as much valuable material is being missed because of the present situation.

CONCLUSIONS.

1. Modern methods can reproduce perfectly in colour or line if properly applied.
2. Economy can be effected by pooling requirements.
3. Colour photography is out of the question for some years yet.
4. Chromo-lithography is out of the question; no satisfactory artists are now available; its place is taken by photo-lithography.
5. Photo-processes avoid the danger of inaccuracy on account of artists having to copy an object or sketch.
6. Special arrangements to give a firm (or firms) steady production must be made by the " order-pooling " authority to enable them to economise.

AN ITEM IN MODERN " ANCIENT HISTORY " OF OUR LIST OF BRITISH BUTTERFLIES.

By Hy. J. T.

Recently, under unwelcome compulsion, I have had to move a considerable number of items of my large and comprehensive entomological library which had been comfortably stored away as being infrequently, if at all, subjects of consultation. In placing these afresh (an onerous and long task still only partly done) I have been looking into each item, whether small or large, and have recalled to mind many facts which length of time had driven from mind. Among the " olla podrida " of informative matters was a copy of the epoch-making Supplement by Edward Newman to the monthly paper *Young England*, in 1860, entitled " A Natural History of all the British Butterflies." This supplement was illustrated with beautiful wood engraved figures of all the 64 species recognized as undoubtedly indigenous. Added is a portrait of the author. There are 24 quarto pages and one of the chapters deals

with the reputed British species of Butterflies to the number of 76 and Newman, in no restrained language, deals with those who had been responsible for their introduction, and they were not dealers whom we modern entomologists are so prone to blame. The following is a quotation of some of his remarks:—

" In this wildest and most extravagant romance, there is nothing half so wild, or half so extravagant, as in the histories of our British Butterflies. I do not allude to the fancies of schoolboys, whose inexperience may often lead them into accidental mistakes, and whose anxiety to possess rarities may induce them to over-rate the value of their captures; my observations apply only to the aged and the honoured; to a pious and amiable lady, to learned and respected men. I cannot forget the rapture with which, in 1827, I first opened Letitia Jermyn's 'Butterfly Collectors' Vade-mecum.' I was in dreamland for months, and my dreams were of butterflies with strange names, butterflies which I painted in imagination with the gorgeous colours of tropical humming-birds. By degrees I became acquainted with the works of Adrian Hardy Haworth, James Francis Stephens, John Curtis, and John Obadiah Westwood—men whose hoary heads were encircled with scientific laurels, whose names never appeared in print without an appended alphabet of letters indicative of proficiency in knowledge and in wisdom, men whose brows were furrowed with thought, and encircled with a halo of science. Well, the combined efforts of these four gentlemen, and one lady, raised the number of our butterflies to one hundred and thirty-nine, and yet in 1860 I am unable to recognize more than sixty-four, sixty of them really obtainable by industry, and four, alas! to be lamented as things that have been and perhaps hoped for, as things that may be again."

Newman's inclination was, when asked what had become of the butterflies omitted and why he had omitted them, to give the simple and straightforward answer, " Because those reputed British butterflies are words, and not things, and because I wish you to acquire knowledge of things and not of words." But on second thought he replied, " Because five of our most distinguished entomological savants have placed them on record, I think courtesy demands I should not dismiss their lucubrations in quite so summary a manner." After this Newman gives a series of short paragraphs on each of the 76 " candidates for naturalization."

Here are the names of the " rejected candidates " as he calls them. I will give the scientific names and omit the English names he also gives.

Swallowtails.—*Papilio feistamelli*, *P. duponcheli*, and *P. podalirius*.

Whites.—*Doritis apollo*, *D. mnemosyne*, *Pieris chariclea* (spring brood of *brassicae*), *P. nelo* var. of *P. rapae*?, *P. metra*, *P. sabellicae* (*P. rapi*, f), and *P. monuste*.

Red-horns.—*Colias philodice*, *C. europome*, *C. palaeno*, *C. chrysotheme*, *C. helice*, and *Papilio myrmidone*.

Fritillaries.—*Argynnis aphrodite*, *A. cybele*, *A. niobe*, *A. charlotta* (*A. aglaia* ♀?), *A. dia*, *Melitaea parthenie*, *M. maturna*, *M. tharos*, *M. eos* (var. of *M. athalia*), *M. dietynna*, *M. tessellata*, *M. pyronia* (*M. athalia*).

Angle-Wings.—*Vanessa huntera*, *Junoria hamstadiensis*, *Limenitis camilla*.

Nymphs.—*Nymphalis populi* and *Araschnia levana*.

Satyrs.—*Satyrus maera*, *S. pilosellae*, *S. briseis*, *S. phaedra*, *S. maturna*, *S. jurtina* (♀ of *janira*), *S. hermione*, *Erebia melampus*, *E. mnestra*, *E. ligea*, *E. alcyone*, *Chortobius hero*, *C. arcanius*, *C. polymeda*, *C. typhon*, *C. polydama*, and *C. iphis* (davus).

Argus Butterflies.—*Thecla titus*, *T. spini*, *T. ilicis*, *Polyommatus virgaureae*, *P. dispar*, *P. chryseis*, *Lycaena boetica*, *L. labienus*, *L. thestylis*, *L. calaethis*, *L. lacon*, *L. artaxerxes* (v. of *agestis*), *L. dorylas*, *L. icarius*, *L. eros*, *L. argus*, *L. idas*, *L. hyacinthus*, *L. alcon*, *L. salmacis*, and *L. agrestis*.

Skippers.—*Syricthus oileus*, *S. malvarum*, *S. lavateraе*, *Hesperia sylvius*, and *H. vitellius*.

NOTES FROM IRELAND.

Introduced Irish Lepidoptera.—There is a number of species of Lepidoptera occurring in Ireland which feed on plants which are not natives in that country. Pine was distributed throughout the British Isles during the early postglacial, but later died out completely in Ireland, and in Great Britain is now native only in the Highlands of Scotland and a few scattered localities in southern England. It is apparent, therefore, that such Pine-feeding species as *Panolis flammea* (*piniperda*), *Thera firmata*, *T. obeliscata*, *Ellopia fasciaria*, *Semiothisa liturata*, *Eupithecia pini*, *E. indigata*, and *Bupalus piniaria*, as well as *Evetria buoliana* and other Pine-feeding Microlepidoptera, all of which are apparently generally distributed in Ireland, must have been artificially introduced into that country. Many, or possibly all, of them may be natives in Great Britain but certainly owe their present general distribution to artificial means. Larch is not native either in Ireland or Great Britain, and therefore *Eupithecia lariciata*, *Argyresthia laevigatella* and other Larch-feeding species must have been artificially introduced into both countries. The distribution of the Spruce-feeding species, such as *Boarmia* (*Cleora*) *ribeata* (*abietaria*), *Thera variata* and *Eupithecia tantillaria*, would appear to be natural.

During the early postglacial there were land-connections between Ireland and Great Britain and between Great Britain and the Continent but the British-Irish land-bridge was severed long before the land-bridge between Great Britain and the Continent, with the result that migrations of animals and plants into Great Britain continued to take place long after migrations into Ireland ceased. Beech, Lime, Sycamore and Hornbeam are all late postglacial arrivals in Britain and did not reach Ireland, so that Irish species which feed solely on these plants, *Cosymbia* (*Euphyia*) *linearia* and *Pammene regiana*, for example, must have been artificially introduced. R. E. Dillon recorded *Ptilophora plumigera*, *Tiliacea aurago* and *Mimas tiliae* from Ireland but Donovan (*Cat. Macrolep. Ireland*, 1936), quite rightly, doubts these records. The fact that the food-plants of these species are not natives of Ireland further goes to show that the records are probably incorrect.—Bryan P. Beirne.

The Food-Plant of Blastobasis lignea, Wals.—The life-history of this interesting species is described by W. Mansbridge and A. E. Wright in *The Entomologist*, 1939, p. 27, and the food-plants are stated to be Yew, Cotoneaster and Spruce. I have beaten the moth commonly from